



07/30/14



## Technical Report for

**Stantec Consulting Services Inc.**

**Sunoco - Marcus Hook Facility, PA**

**213402353**

**Accutest Job Number: JB47773**

**Sampling Dates: 09/17/13 - 09/18/13**

### Report to:

**Stantec**

**Lisa.Votta@stantec.com**

**ATTN: Lisa Votta**

**Total number of pages in report: 64**



Test results contained within this data package meet the requirements  
of the National Environmental Laboratory Accreditation Program  
and/or state specific certification programs as applicable.

A handwritten signature in black ink that reads "Nancy T. Cole".

**Nancy Cole**  
**Laboratory Director**

**Client Service contact: Marie Meidhof 732-329-0200**

Certifications: NJ(12129), NY(10983), CA, CT, DE, FL, IL, IN, KS, KY, LA, MA, MD, MI, MT, NC,  
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Test results relate only to samples analyzed.

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## Sample Summary

**Stantec Consulting Services Inc.**

Job No: **JB47773**

**Sunoco - Marcus Hook Facility, PA**  
Project No: **213402353**

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
JB47773-1	09/17/13	15:30 JC	09/18/13	SO	Soil	MH523-1A(0.0-2.0)
JB47773-2	09/17/13	15:45 JC	09/18/13	SO	Soil	MH523-1A(5.5-6.0)
JB47773-3	09/18/13	09:25 JC	09/18/13	SO	Soil	MH523-2A(0.0-2.0)
JB47773-4	09/18/13	09:35 JC	09/18/13	SO	Soil	MH523-2A(5.0-5.5)
JB47773-5	09/18/13	11:10 JC	09/18/13	SO	Soil	MH523-3A(0.0-2.0)
JB47773-6	09/18/13	11:20 JC	09/18/13	SO	Soil	MH523-3A(5.3-5.8)
JB47773-7	09/18/13	13:10 JC	09/18/13	SO	Soil	MH523-4A(0.0-2.0)
JB47773-8	09/18/13	13:15 JC	09/18/13	SO	Soil	MH523-4A(6.0-6.5)
JB47773-9	09/18/13	14:05 JC	09/18/13	AQ	Field Blank Soil	FB09182013

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Soil samples reported on a dry weight basis unless otherwise indicated on result page.



## CASE NARRATIVE / CONFORMANCE SUMMARY

**Client:** Stantec Consulting Services Inc.

**Job No** JB47773

**Site:** Sunoco - Marcus Hook Facility, PA

**Report Date** 10/23/2013 3:41:27 P

On 09/18/2013, 8 Sample(s), 0 Trip Blank(s) and 1 Field Blank(s) were received at Accutest Laboratories at a temperature of 2.1 C. Samples were intact and chemically preserved, unless noted below. An Accutest Job Number of JB47773 was assigned to the project. Laboratory sample ID, client sample ID and dates of sample collection are detailed in the report's Results Summary Section.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

**Matrix:** AQ

**Batch ID:** V2E4300

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB48653-23MS, JB48653-23MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Matrix Spike Recovery(s) for Methyl Tert Butyl Ether are outside control limits. Outside control limits due to high level in sample relative to spike amount.

**Matrix:** SO

**Batch ID:** V2C5159

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB48850-2MS, JB48850-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

**Matrix:** SO

**Batch ID:** VA7487

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB48200-17MS, JB48200-17MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- RPD(s) for MSD for 1,2,4-Trimethylbenzene, 1,2-Dichloroethane, 1,3,5-Trimethylbenzene, Benzene, Cyclohexane, Ethylbenzene, Hexane, Isopropylbenzene, Methyl Tert Butyl Ether, sec-Butylbenzene, tert-Butylbenzene, Toluene, Xylene (total) are outside control limits for sample JB48200-17MSD. Outside control limits due to matrix interference.

**Matrix:** SO

**Batch ID:** VD8725

- All samples were analyzed within the recommended method holding time.
- Sample(s) JB47773-6MS, JB47773-6MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

**Matrix:** SO

**Batch ID:** VV5951

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB47945-1MS, JB47945-4DUP were used as the QC samples indicated.

## Extractables by GCMS By Method SW846 8270D

**Matrix:** AQ

**Batch ID:** OP69491

- All method blanks for this batch meet method specific criteria.
- Sample(s) JB48904-1MS, JB48904-1MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for Benzo(k)fluoranthene are outside control limits. Outside control limits due to matrix interference.
- Matrix Spike Duplicate Recovery(s) for Pyrene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene are outside control limits. Outside control limits due to matrix interference.
- RPD(s) for MSD for Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene are outside control limits for sample OP69491-MSD. Outside control limits due to matrix interference.
- JB47773-9: Sample extracted outside the holding time due to scheduling error.

**Matrix:** SO

**Batch ID:** OP69232

- All samples were extracted within the recommended method holding time.
- Sample(s) JB47773-1MS, JB47773-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.

## Volatiles by GC By Method SW846 8011

**Matrix:** SO

**Batch ID:** M:OP34986

- The data for SW846 8011 meets quality control requirements.
- JB47773-3: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47773-8: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47773-7: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47773-6: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47773-4: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47773-5: Analysis performed at Accutest Laboratories, Marlborough, MA.

**Matrix:** SO

**Batch ID:** M:OP35004

- The data for SW846 8011 meets quality control requirements.
- JB47773-2: Analysis performed at Accutest Laboratories, Marlborough, MA.
- JB47773-1: Analysis performed at Accutest Laboratories, Marlborough, MA.

## Metals By Method SW846 6010C

**Matrix:** AQ

**Batch ID:** MP74794

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

**Matrix:** SO

**Batch ID:** MP74875

- All samples were digested within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB47760-3AMS, JB47760-3AMSD, JB47760-3ASDL were used as the QC samples for metals.
- Matrix Spike Recovery(s) for Zinc are outside control limits. Spike recovery indicates possible matrix interference and/or sample nonhomogeneity.
- Matrix Spike Duplicate Recovery(s) for Zinc are outside control limits. Probable cause due to matrix interference.
- RPD(s) for Serial Dilution for Vanadium are outside control limits for sample MP74875-SD1. Percent difference acceptable due to low initial sample concentration (< 50 times IDL).

## Wet Chemistry By Method SM2540 G-97

**Matrix:** SO

**Batch ID:** GN91875

- The data for SM2540 G-97 meets quality control requirements.

2

Accutest certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting Accutest's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

Accutest Laboratories is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. Data release is authorized by Accutest Laboratories indicated via signature on the report cover



## SAMPLE DELIVERY GROUP CASE NARRATIVE

**Client:** Accutest New Jersey

**Job No** JB47773

**Site:** SECORPAE: Sunoco - Marcus Hook Facility, PA

**Report Date** 10/15/2013 9:28:56 AM

8 Sample(s) were collected on between 09/17/2013 and 09/18/2013 and were received at Accutest on 09/18/2013 properly preserved, at 2.3 Deg. C and intact. These Samples received an Accutest job number of JB47773. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Volatiles by GC By Method SW846 8011

**Matrix:** SO

**Batch ID:** OP34986

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB47754-1MS, JB47754-1MSD were used as the QC samples indicated.

**Matrix:** SO

**Batch ID:** OP35004

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) JB47906-9MS, JB47906-9MSD were used as the QC samples indicated.
- Matrix Spike Recovery(s) for 1,2-Dibromoethane are outside control limits. Outside control limits due to possible matrix interference.
- OP35004-MB, OP35004-BS for Bromofluorobenzene (S): Samples are non-detect for analyte.
- JB47773-1,2 for Bromofluorobenzene (S): Outside control limits due to possible matrix interference.
- OP35004-MS/MSD for Bromofluorobenzene (S): Outside control limits due to possible matrix interference.
- OP35004-BS for 1,2-Dibromoethane: Samples are non-detect for analyte.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(JB47773).

**Summary of Hits**

Job Number: JB47773

Account: Stantec Consulting Services Inc.

Project: Sunoco - Marcus Hook Facility, PA

Collected: 09/17/13 thru 09/18/13

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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**JB47773-1 MH523-1A(0.0-2.0)**

sec-Butylbenzene	0.31 J	5.2	0.12	ug/kg	SW846 8260B
Isopropylbenzene	0.33 J	5.2	0.077	ug/kg	SW846 8260B
Acenaphthene	26.7 J	59	17	ug/kg	SW846 8270D
Anthracene	104	59	21	ug/kg	SW846 8270D
Benzo(a)anthracene	43.1 J	59	19	ug/kg	SW846 8270D
Benzo(a)pyrene	41.4 J	59	18	ug/kg	SW846 8270D
Benzo(b)fluoranthene	26.4 J	59	20	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	159	59	22	ug/kg	SW846 8270D
Chrysene	56.2 J	59	20	ug/kg	SW846 8270D
Fluorene	83.4	59	19	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	29.3 J	59	20	ug/kg	SW846 8270D
2-Methylnaphthalene	137	120	33	ug/kg	SW846 8270D
Naphthalene	81.6	59	16	ug/kg	SW846 8270D
Phenanthrene	56.6 J	59	27	ug/kg	SW846 8270D
Pyrene	305	59	23	ug/kg	SW846 8270D
Cobalt	7.7	5.9	0.078	mg/kg	SW846 6010C
Lead	20.8	2.4	0.25	mg/kg	SW846 6010C
Nickel	14.5	4.7	0.093	mg/kg	SW846 6010C
Vanadium	36.8	5.9	0.086	mg/kg	SW846 6010C
Zinc	43.9	2.4	0.28	mg/kg	SW846 6010C

**JB47773-2 MH523-1A(5.5-6.0)**

Benzene	1.0	1.0	0.12	ug/kg	SW846 8260B
Toluene	0.75 J	1.0	0.11	ug/kg	SW846 8260B
Ethylbenzene	1.2	1.0	0.27	ug/kg	SW846 8260B
Xylene (total)	2.9	1.0	0.14	ug/kg	SW846 8260B
Methyl Tert Butyl Ether	31.6	1.0	0.24	ug/kg	SW846 8260B
sec-Butylbenzene	0.22 J	5.2	0.12	ug/kg	SW846 8260B
tert-Butylbenzene	0.47 J	5.2	0.31	ug/kg	SW846 8260B
Cyclohexane	56.0	5.2	0.13	ug/kg	SW846 8260B
Hexane	55.0	5.2	0.25	ug/kg	SW846 8260B
Isopropylbenzene	0.53 J	5.2	0.077	ug/kg	SW846 8260B
Cobalt	8.0	6.3	0.084	mg/kg	SW846 6010C
Lead	21.4	2.5	0.27	mg/kg	SW846 6010C
Nickel	13.3	5.1	0.10	mg/kg	SW846 6010C
Vanadium	23.9	6.3	0.093	mg/kg	SW846 6010C
Zinc	35.4	2.5	0.30	mg/kg	SW846 6010C

**JB47773-3 MH523-2A(0.0-2.0)**

Anthracene	50.3 J	57	20	ug/kg	SW846 8270D
Benzo(a)anthracene	94.5	57	19	ug/kg	SW846 8270D

**Summary of Hits**

Job Number: JB47773

Account: Stantec Consulting Services Inc.

Project: Sunoco - Marcus Hook Facility, PA

Collected: 09/17/13 thru 09/18/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Benzo(a)pyrene	111	57	18	ug/kg	SW846 8270D	
Benzo(b)fluoranthene	96.8	57	19	ug/kg	SW846 8270D	
Benzo(g,h,i)perylene	209	57	21	ug/kg	SW846 8270D	
Benzo(k)fluoranthene	33.3 J	57	22	ug/kg	SW846 8270D	
1,1'-Biphenyl	46.9 J	110	6.7	ug/kg	SW846 8270D	
Chrysene	121	57	19	ug/kg	SW846 8270D	
Dibenzo(a,h)anthracene	45.9 J	57	20	ug/kg	SW846 8270D	
Fluoranthene	111	57	25	ug/kg	SW846 8270D	
Fluorene	27.4 J	57	19	ug/kg	SW846 8270D	
Indeno(1,2,3-cd)pyrene	94.8	57	20	ug/kg	SW846 8270D	
2-Methylnaphthalene	310	110	32	ug/kg	SW846 8270D	
Naphthalene	124	57	16	ug/kg	SW846 8270D	
Phenanthrene	321	57	26	ug/kg	SW846 8270D	
Pyrene	323	57	22	ug/kg	SW846 8270D	
Cobalt	8.3	5.8	0.077	mg/kg	SW846 6010C	
Lead	56.0	2.3	0.25	mg/kg	SW846 6010C	
Nickel	41.5	4.7	0.092	mg/kg	SW846 6010C	
Vanadium	52.0	5.8	0.085	mg/kg	SW846 6010C	
Zinc	80.1	2.3	0.27	mg/kg	SW846 6010C	

JB47773-4 MH523-2A(5.0-5.5)

Benzene	0.54 J	1.1	0.13	ug/kg	SW846 8260B
Xylene (total)	0.36 J	1.1	0.15	ug/kg	SW846 8260B
sec-Butylbenzene	0.64 J	5.4	0.12	ug/kg	SW846 8260B
tert-Butylbenzene	3.9 J	5.4	0.32	ug/kg	SW846 8260B
Cyclohexane	9.7	5.4	0.13	ug/kg	SW846 8260B
Hexane	0.84 J	5.4	0.26	ug/kg	SW846 8260B
Isopropylbenzene	0.74 J	5.4	0.080	ug/kg	SW846 8260B
Acenaphthene	478	61	18	ug/kg	SW846 8270D
Anthracene	27.2 J	61	21	ug/kg	SW846 8270D
Benzo(a)anthracene	27.0 J	61	20	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	26.5 J	61	23	ug/kg	SW846 8270D
Fluoranthene	107	61	27	ug/kg	SW846 8270D
Fluorene	113	61	20	ug/kg	SW846 8270D
2-Methylnaphthalene	34.6 J	120	34	ug/kg	SW846 8270D
Phenanthrene	117	61	28	ug/kg	SW846 8270D
Pyrene	95.5	61	24	ug/kg	SW846 8270D
Cobalt	7.2	6.4	0.085	mg/kg	SW846 6010C
Lead	23.2	2.6	0.27	mg/kg	SW846 6010C
Nickel	13.9	5.1	0.10	mg/kg	SW846 6010C
Vanadium	34.6	6.4	0.094	mg/kg	SW846 6010C
Zinc	49.7	2.6	0.30	mg/kg	SW846 6010C

**Summary of Hits**

Job Number: JB47773  
 Account: Stantec Consulting Services Inc.  
 Project: Sunoco - Marcus Hook Facility, PA  
 Collected: 09/17/13 thru 09/18/13

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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**JB47773-5 MH523-3A(0.0-2.0)**

Benzene	62.1 J	110	13	ug/kg	SW846 8260B
Toluene	79.7 J	110	12	ug/kg	SW846 8260B
Ethylbenzene	46.0 J	110	29	ug/kg	SW846 8260B
Xylene (total)	260	110	15	ug/kg	SW846 8260B
sec-Butylbenzene	426 J	560	13	ug/kg	SW846 8260B
tert-Butylbenzene	939	560	33	ug/kg	SW846 8260B
Cyclohexane	4680	560	14	ug/kg	SW846 8260B
Hexane	1050	560	27	ug/kg	SW846 8260B
Isopropylbenzene	752	560	8.3	ug/kg	SW846 8260B
1,2,4-Trimethylbenzene	115 J	560	23	ug/kg	SW846 8260B
Acenaphthene	580	59	17	ug/kg	SW846 8270D
Anthracene	955	59	21	ug/kg	SW846 8270D
Benzo(a)anthracene	1260	59	19	ug/kg	SW846 8270D
Benzo(a)pyrene	932	59	18	ug/kg	SW846 8270D
Benzo(b)fluoranthene	935	59	20	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	685	59	22	ug/kg	SW846 8270D
Benzo(k)fluoranthene	247	59	22	ug/kg	SW846 8270D
Chrysene	2080	59	20	ug/kg	SW846 8270D
Dibenzo(a,h)anthracene	240	59	20	ug/kg	SW846 8270D
Fluoranthene	1530	59	26	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	425	59	20	ug/kg	SW846 8270D
Phenanthrene	2830	59	27	ug/kg	SW846 8270D
Pyrene	2120	59	23	ug/kg	SW846 8270D
Cobalt	8.5	6.0	0.079	mg/kg	SW846 6010C
Lead	83.1	2.4	0.26	mg/kg	SW846 6010C
Nickel	20.3	4.8	0.095	mg/kg	SW846 6010C
Vanadium	34.9	6.0	0.087	mg/kg	SW846 6010C
Zinc	99.5	2.4	0.28	mg/kg	SW846 6010C

**JB47773-6 MH523-3A(5.3-5.8)**

Toluene	23.3 J	110	11	ug/kg	SW846 8260B
Xylene (total)	128	110	15	ug/kg	SW846 8260B
sec-Butylbenzene	3490	540	12	ug/kg	SW846 8260B
tert-Butylbenzene	2630	540	32	ug/kg	SW846 8260B
Cyclohexane	969	540	13	ug/kg	SW846 8260B
Hexane	525 J	540	26	ug/kg	SW846 8260B
Isopropylbenzene	3280	540	8.0	ug/kg	SW846 8260B
1,2,4-Trimethylbenzene	151 J	540	22	ug/kg	SW846 8260B
1,3,5-Trimethylbenzene	49.7 J	540	17	ug/kg	SW846 8260B
Anthracene	1880	61	21	ug/kg	SW846 8270D
Benzo(a)anthracene	1140	61	20	ug/kg	SW846 8270D
Benzo(a)pyrene	701	61	18	ug/kg	SW846 8270D

**Summary of Hits**

Job Number: JB47773

Account: Stantec Consulting Services Inc.

Project: Sunoco - Marcus Hook Facility, PA

Collected: 09/17/13 thru 09/18/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Benzo(g,h,i)perylene	542	61	23	ug/kg	SW846 8270D	
Chrysene	3050	61	20	ug/kg	SW846 8270D	
Dibenzo(a,h)anthracene	179	61	21	ug/kg	SW846 8270D	
Indeno(1,2,3-cd)pyrene	266	61	21	ug/kg	SW846 8270D	
Phenanthrene	5840	61	28	ug/kg	SW846 8270D	
Pyrene	2950	61	23	ug/kg	SW846 8270D	
Cobalt	6.7	6.0	0.079	mg/kg	SW846 6010C	
Lead	13.5	2.4	0.25	mg/kg	SW846 6010C	
Nickel	12.6	4.8	0.094	mg/kg	SW846 6010C	
Vanadium	29.8	6.0	0.087	mg/kg	SW846 6010C	
Zinc	33.2	2.4	0.28	mg/kg	SW846 6010C	

**JB47773-7 MH523-4A(0.0-2.0)**

Hexane	1.1 J	6.2	0.30	ug/kg	SW846 8260B
Anthracene	64.8	57	20	ug/kg	SW846 8270D
Benzo(a)anthracene	114	57	19	ug/kg	SW846 8270D
Benzo(a)pyrene	84.5	57	17	ug/kg	SW846 8270D
Benzo(b)fluoranthene	82.3	57	19	ug/kg	SW846 8270D
Benzo(g,h,i)perylene	151	57	21	ug/kg	SW846 8270D
1,1'-Biphenyl	74.1 J	110	6.6	ug/kg	SW846 8270D
Chrysene	170	57	19	ug/kg	SW846 8270D
Fluoranthene	112	57	25	ug/kg	SW846 8270D
Indeno(1,2,3-cd)pyrene	55.2 J	57	20	ug/kg	SW846 8270D
2-Methylnaphthalene	450	110	32	ug/kg	SW846 8270D
Naphthalene	143	57	16	ug/kg	SW846 8270D
Phenanthrene	534	57	26	ug/kg	SW846 8270D
Pyrene	450	57	22	ug/kg	SW846 8270D
Cobalt	6.4	5.9	0.078	mg/kg	SW846 6010C
Lead	68.1	2.4	0.25	mg/kg	SW846 6010C
Nickel	17.8	4.7	0.093	mg/kg	SW846 6010C
Vanadium	35.5	5.9	0.086	mg/kg	SW846 6010C
Zinc	54.8	2.4	0.28	mg/kg	SW846 6010C

**JB47773-8 MH523-4A(6.0-6.5)**

Benzene	25.2 J	120	14	ug/kg	SW846 8260B
Toluene	41.2 J	120	12	ug/kg	SW846 8260B
Ethylbenzene	106 J	120	31	ug/kg	SW846 8260B
Xylene (total)	224	120	16	ug/kg	SW846 8260B
sec-Butylbenzene	1500	590	13	ug/kg	SW846 8260B
tert-Butylbenzene	1750	590	35	ug/kg	SW846 8260B
Cyclohexane	471 J	590	15	ug/kg	SW846 8260B
Hexane	63.1 J	590	28	ug/kg	SW846 8260B
Isopropylbenzene	2210	590	8.7	ug/kg	SW846 8260B

**Summary of Hits**

Job Number: JB47773  
 Account: Stantec Consulting Services Inc.  
 Project: Sunoco - Marcus Hook Facility, PA  
 Collected: 09/17/13 thru 09/18/13

Lab Sample ID Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
1,2,4-Trimethylbenzene	104 J	590	25	ug/kg	SW846 8260B	
Acenaphthene	769	59	17	ug/kg	SW846 8270D	
Anthracene	1260	59	21	ug/kg	SW846 8270D	
Benzo(a)anthracene	174	59	19	ug/kg	SW846 8270D	
Benzo(a)pyrene	54.7 J	59	18	ug/kg	SW846 8270D	
Benzo(b)fluoranthene	47.1 J	59	20	ug/kg	SW846 8270D	
Benzo(g,h,i)perylene	38.5 J	59	22	ug/kg	SW846 8270D	
Chrysene	246	59	20	ug/kg	SW846 8270D	
Fluoranthene	359	59	26	ug/kg	SW846 8270D	
Fluorene	2370	59	19	ug/kg	SW846 8270D	
Phenanthrene	4990	59	27	ug/kg	SW846 8270D	
Pyrene	1660	59	23	ug/kg	SW846 8270D	
Cobalt	6.5	6.3	0.083	mg/kg	SW846 6010C	
Lead	38.6	2.5	0.27	mg/kg	SW846 6010C	
Nickel	13.5	5.0	0.099	mg/kg	SW846 6010C	
Vanadium	29.6	6.3	0.092	mg/kg	SW846 6010C	
Zinc	52.2	2.5	0.29	mg/kg	SW846 6010C	

JB47773-9      FB09182013

No hits reported in this sample.



4

## Sample Results

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## Report of Analysis

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**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-1A(0.0-2.0)	<b>Date Sampled:</b>	09/17/13
<b>Lab Sample ID:</b>	JB47773-1	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.4
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A198643.D	1	10/01/13	OTR	n/a	n/a	VA7487
Run #2							

	Initial Weight
Run #1	5.7 g
Run #2	

**Leaded Gasoline and Aviation Gas List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.12	ug/kg	
108-88-3	Toluene	ND	1.0	0.11	ug/kg	
100-41-4	Ethylbenzene	ND	1.0	0.27	ug/kg	
1330-20-7	Xylene (total)	ND	1.0	0.14	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.24	ug/kg	
135-98-8	sec-Butylbenzene	0.31	5.2	0.12	ug/kg	J
98-06-6	tert-Butylbenzene	ND	5.2	0.31	ug/kg	
110-82-7	Cyclohexane	ND	5.2	0.13	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.14	ug/kg	
110-54-3	Hexane	ND	5.2	0.25	ug/kg	
98-82-8	Isopropylbenzene	0.33	5.2	0.077	ug/kg	J
95-63-6	1,2,4-Trimethylbenzene	ND	5.2	0.22	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.2	0.17	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		59-130%
17060-07-0	1,2-Dichloroethane-D4	102%		65-123%
2037-26-5	Toluene-D8	113%		80-124%
460-00-4	4-Bromofluorobenzene	110%		71-132%

ND = Not detected      MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 2

<b>Client Sample ID:</b>	MH523-1A(0.0-2.0)	<b>Date Sampled:</b>	09/17/13
<b>Lab Sample ID:</b>	JB47773-1	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.4
<b>Method:</b>	SW846 8270D SW846 3550C		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M56723.D	1	09/25/13	ALS	09/24/13	OP69232	E2M2403
Run #2							

	Initial Weight	Final Volume
Run #1	20.1 g	1.0 ml
Run #2		

**ABN Special List**

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	290	99	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	1200	72	ug/kg	
95-48-7	2-Methylphenol	ND	120	67	ug/kg	
	3&4-Methylphenol	ND	120	75	ug/kg	
100-02-7	4-Nitrophenol	ND	590	100	ug/kg	
108-95-2	Phenol	ND	120	62	ug/kg	
83-32-9	Acenaphthene	26.7	59	17	ug/kg	J
120-12-7	Anthracene	104	59	21	ug/kg	
56-55-3	Benzo(a)anthracene	43.1	59	19	ug/kg	J
50-32-8	Benzo(a)pyrene	41.4	59	18	ug/kg	J
205-99-2	Benzo(b)fluoranthene	26.4	59	20	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	159	59	22	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	59	22	ug/kg	
92-52-4	1,1'-Biphenyl	ND	120	6.8	ug/kg	
218-01-9	Chrysene	56.2	59	20	ug/kg	J
53-70-3	Dibenzo(a,h)anthracene	ND	59	20	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	120	13	ug/kg	
84-66-2	Diethyl phthalate	ND	120	20	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	120	52	ug/kg	
206-44-0	Fluoranthene	ND	59	26	ug/kg	
86-73-7	Fluorene	83.4	59	19	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	29.3	59	20	ug/kg	J
91-57-6	2-Methylnaphthalene	137	120	33	ug/kg	
91-20-3	Naphthalene	81.6	59	16	ug/kg	
85-01-8	Phenanthrene	56.6	59	27	ug/kg	J
129-00-0	Pyrene	305	59	23	ug/kg	
110-86-1	Pyridine	ND	120	24	ug/kg	
91-22-5	Quinoline	ND	290	56	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	85%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	<b>MH523-1A(0.0-2.0)</b>	<b>Date Sampled:</b>	<b>09/17/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-1</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>SO - Soil</b>		
<b>Method:</b>	<b>SW846 8270D SW846 3550C</b>		
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>	<b>Percent Solids:</b>	<b>84.4</b>

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	74%		15-110%
118-79-6	2,4,6-Tribromophenol	87%		20-123%
4165-60-0	Nitrobenzene-d5	78%		10-110%
321-60-8	2-Fluorobiphenyl	76%		17-110%
1718-51-0	Terphenyl-d14	80%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 1

<b>Client Sample ID:</b>	MH523-1A(0.0-2.0)	<b>Date Sampled:</b>	09/17/13
<b>Lab Sample ID:</b>	JB47773-1	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.4
<b>Method:</b>	SW846 8011 SW846 3550B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	BB51232.D	1	09/30/13	AMA	09/27/13	M:OP35004	M:GBB3021
Run #2							

	Initial Weight	Final Volume
Run #1	30.5 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	2.9	1.1	ug/kg	
<b>CAS No.</b> <b>Surrogate Recoveries</b> <b>Run# 1</b> <b>Run# 2</b> <b>Limits</b>						
460-00-4	Bromofluorobenzene (S)	289% <sup>b</sup>			61-167%	
460-00-4	Bromofluorobenzene (S)	135%			61-167%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Outside control limits due to possible matrix interference.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	<b>MH523-1A(0.0-2.0)</b>	<b>Date Sampled:</b>	<b>09/17/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-1</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>SO - Soil</b>	<b>Percent Solids:</b>	<b>84.4</b>
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>		

**Metals Analysis**

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	7.7	5.9	0.078	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Lead	20.8	2.4	0.25	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Nickel	14.5	4.7	0.093	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Vanadium	36.8	5.9	0.086	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Zinc	43.9	2.4	0.28	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA32250

(2) Prep QC Batch: MP74875

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-1A(5.5-6.0)	<b>Date Sampled:</b>	09/17/13
<b>Lab Sample ID:</b>	JB47773-2	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	77.7
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A198644.D	1	10/01/13	OTR	n/a	n/a	VA7487
Run #2							

	Initial Weight
Run #1	6.2 g
Run #2	

**Leaded Gasoline and Aviation Gas List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.0	1.0	0.12	ug/kg	
108-88-3	Toluene	0.75	1.0	0.11	ug/kg	J
100-41-4	Ethylbenzene	1.2	1.0	0.27	ug/kg	
1330-20-7	Xylene (total)	2.9	1.0	0.14	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	31.6	1.0	0.24	ug/kg	
135-98-8	sec-Butylbenzene	0.22	5.2	0.12	ug/kg	J
98-06-6	tert-Butylbenzene	0.47	5.2	0.31	ug/kg	J
110-82-7	Cyclohexane	56.0	5.2	0.13	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.0	0.14	ug/kg	
110-54-3	Hexane	55.0	5.2	0.25	ug/kg	
98-82-8	Isopropylbenzene	0.53	5.2	0.077	ug/kg	J
95-63-6	1,2,4-Trimethylbenzene	ND	5.2	0.22	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.2	0.17	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		59-130%
17060-07-0	1,2-Dichloroethane-D4	107%		65-123%
2037-26-5	Toluene-D8	112%		80-124%
460-00-4	4-Bromofluorobenzene	109%		71-132%

ND = Not detected      MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 2

**Client Sample ID:** MH523-1A(5.5-6.0)  
**Lab Sample ID:** JB47773-2  
**Matrix:** SO - Soil  
**Method:** SW846 8270D SW846 3550C  
**Project:** Sunoco - Marcus Hook Facility, PA

Run #1	File ID 2M56732.D	DF 1	Analyzed 09/25/13	By ALS	Prep Date 09/24/13	Prep Batch OP69232	Analytical Batch E2M2403
Run #2							

Initial Weight Run #1 20.1 g	Final Volume 1.0 ml
Run #2	

**ABN Special List**

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	320	110	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	1300	78	ug/kg	
95-48-7	2-Methylphenol	ND	130	73	ug/kg	
	3&4-Methylphenol	ND	130	81	ug/kg	
100-02-7	4-Nitrophenol	ND	640	110	ug/kg	
108-95-2	Phenol	ND	130	67	ug/kg	
83-32-9	Acenaphthene	ND	64	19	ug/kg	
120-12-7	Anthracene	ND	64	22	ug/kg	
56-55-3	Benzo(a)anthracene	ND	64	21	ug/kg	
50-32-8	Benzo(a)pyrene	ND	64	20	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	64	21	ug/kg	
191-24-2	Benzo(g,h,i)perylene	ND	64	24	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	64	24	ug/kg	
92-52-4	1,1'-Biphenyl	ND	130	7.4	ug/kg	
218-01-9	Chrysene	ND	64	22	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	64	22	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	130	14	ug/kg	
84-66-2	Diethyl phthalate	ND	130	22	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	130	57	ug/kg	
206-44-0	Fluoranthene	ND	64	28	ug/kg	
86-73-7	Fluorene	ND	64	21	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	64	22	ug/kg	
91-57-6	2-Methylnaphthalene	ND	130	36	ug/kg	
91-20-3	Naphthalene	ND	64	17	ug/kg	
85-01-8	Phenanthrene	ND	64	29	ug/kg	
129-00-0	Pyrene	ND	64	25	ug/kg	
110-86-1	Pyridine	ND	130	26	ug/kg	
91-22-5	Quinoline	ND	320	60	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	84%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 2 of 2

<b>Client Sample ID:</b>	<b>MH523-1A(5.5-6.0)</b>	<b>Date Sampled:</b>	<b>09/17/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-2</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>SO - Soil</b>		
<b>Method:</b>	<b>SW846 8270D SW846 3550C</b>		
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>	<b>Percent Solids:</b>	<b>77.7</b>

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	72%		15-110%
118-79-6	2,4,6-Tribromophenol	91%		20-123%
4165-60-0	Nitrobenzene-d5	77%		10-110%
321-60-8	2-Fluorobiphenyl	79%		17-110%
1718-51-0	Terphenyl-d14	85%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-1A(5.5-6.0)	<b>Date Sampled:</b>	09/17/13
<b>Lab Sample ID:</b>	JB47773-2	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	77.7
<b>Method:</b>	SW846 8011 SW846 3550B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

Run #1 <sup>a</sup>	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	BB51233.D	1	09/30/13	AMA	09/27/13	M:OP35004	M:GBB3021

	Initial Weight	Final Volume
Run #1	30.2 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	3.2	1.2	ug/kg	
<b>CAS No.</b> <b>Surrogate Recoveries</b> <b>Run# 1</b> <b>Run# 2</b> <b>Limits</b>						
460-00-4	Bromofluorobenzene (S)	288% <sup>b</sup>			61-167%	
460-00-4	Bromofluorobenzene (S)	135%			61-167%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

(b) Outside control limits due to possible matrix interference.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-1A(5.5-6.0)	<b>Date Sampled:</b>	09/17/13
<b>Lab Sample ID:</b>	JB47773-2	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	77.7
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

**Metals Analysis**

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	8.0	6.3	0.084	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Lead	21.4	2.5	0.27	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Nickel	13.3	5.1	0.10	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Vanadium	23.9	6.3	0.093	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Zinc	35.4	2.5	0.30	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA32250

(2) Prep QC Batch: MP74875

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-2A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-3	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.5
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A198645.D	1	10/01/13	OTR	n/a	n/a	VA7487
Run #2							

	Initial Weight
Run #1	5.6 g
Run #2	

**Leaded Gasoline and Aviation Gas List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.1	0.13	ug/kg	
108-88-3	Toluene	ND	1.1	0.11	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.28	ug/kg	
1330-20-7	Xylene (total)	ND	1.1	0.15	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.25	ug/kg	
135-98-8	sec-Butylbenzene	ND	5.3	0.12	ug/kg	
98-06-6	tert-Butylbenzene	ND	5.3	0.31	ug/kg	
110-82-7	Cyclohexane	ND	5.3	0.13	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.14	ug/kg	
110-54-3	Hexane	ND	5.3	0.25	ug/kg	
98-82-8	Isopropylbenzene	ND	5.3	0.079	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	5.3	0.22	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.3	0.17	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		59-130%
17060-07-0	1,2-Dichloroethane-D4	110%		65-123%
2037-26-5	Toluene-D8	112%		80-124%
460-00-4	4-Bromofluorobenzene	113%		71-132%

ND = Not detected      MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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4.3  
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<b>Client Sample ID:</b>	MH523-2A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-3	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.5
<b>Method:</b>	SW846 8270D SW846 3550C		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M56733.D	1	09/25/13	ALS	09/24/13	OP69232	E2M2403
Run #2							

	Initial Weight	Final Volume
Run #1	20.6 g	1.0 ml
Run #2		

**ABN Special List**

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	290	97	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	1100	70	ug/kg	
95-48-7	2-Methylphenol	ND	110	65	ug/kg	
	3&4-Methylphenol	ND	110	73	ug/kg	
100-02-7	4-Nitrophenol	ND	570	97	ug/kg	
108-95-2	Phenol	ND	110	60	ug/kg	
83-32-9	Acenaphthene	ND	57	17	ug/kg	
120-12-7	Anthracene	50.3	57	20	ug/kg	J
56-55-3	Benzo(a)anthracene	94.5	57	19	ug/kg	
50-32-8	Benzo(a)pyrene	111	57	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	96.8	57	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	209	57	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	33.3	57	22	ug/kg	J
92-52-4	1,1'-Biphenyl	46.9	110	6.7	ug/kg	J
218-01-9	Chrysene	121	57	19	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	45.9	57	20	ug/kg	J
84-74-2	Di-n-butyl phthalate	ND	110	13	ug/kg	
84-66-2	Diethyl phthalate	ND	110	20	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	110	51	ug/kg	
206-44-0	Fluoranthene	111	57	25	ug/kg	
86-73-7	Fluorene	27.4	57	19	ug/kg	J
193-39-5	Indeno(1,2,3-cd)pyrene	94.8	57	20	ug/kg	
91-57-6	2-Methylnaphthalene	310	110	32	ug/kg	
91-20-3	Naphthalene	124	57	16	ug/kg	
85-01-8	Phenanthrene	321	57	26	ug/kg	
129-00-0	Pyrene	323	57	22	ug/kg	
110-86-1	Pyridine	ND	110	23	ug/kg	
91-22-5	Quinoline	ND	290	54	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	91%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	<b>MH523-2A(0.0-2.0)</b>	<b>Date Sampled:</b>	<b>09/18/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-3</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>SO - Soil</b>		
<b>Method:</b>	<b>SW846 8270D SW846 3550C</b>		
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>	<b>Percent Solids:</b>	<b>84.5</b>

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	78%		15-110%
118-79-6	2,4,6-Tribromophenol	93%		20-123%
4165-60-0	Nitrobenzene-d5	81%		10-110%
321-60-8	2-Fluorobiphenyl	84%		17-110%
1718-51-0	Terphenyl-d14	90%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-2A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-3	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.5
<b>Method:</b>	SW846 8011 SW846 3550B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	BK29904.D	1	09/26/13	AMA	09/26/13	M:OP34986	M:GBK997
Run #2							

	Initial Weight	Final Volume
Run #1	30.3 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	2.9	1.1	ug/kg	
CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits						
460-00-4	Bromofluorobenzene (S)	136%			61-167%	
460-00-4	Bromofluorobenzene (S)	114%			61-167%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-2A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-3	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.5
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

**Metals Analysis**

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	8.3	5.8	0.077	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Lead	56.0	2.3	0.25	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Nickel	41.5	4.7	0.092	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Vanadium	52.0	5.8	0.085	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Zinc	80.1	2.3	0.27	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA32250

(2) Prep QC Batch: MP74875

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-2A(5.0-5.5)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-4	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	80.3
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V138350.D	1	10/02/13	OTR	n/a	n/a	VV5951
Run #2							

	Initial Weight
Run #1	5.8 g
Run #2	

**Leaded Gasoline and Aviation Gas List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.54	1.1	0.13	ug/kg	J
108-88-3	Toluene	ND	1.1	0.11	ug/kg	
100-41-4	Ethylbenzene	ND	1.1	0.28	ug/kg	
1330-20-7	Xylene (total)	0.36	1.1	0.15	ug/kg	J
1634-04-4	Methyl Tert Butyl Ether	ND	1.1	0.25	ug/kg	
135-98-8	sec-Butylbenzene	0.64	5.4	0.12	ug/kg	J
98-06-6	tert-Butylbenzene	3.9	5.4	0.32	ug/kg	J
110-82-7	Cyclohexane	9.7	5.4	0.13	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.1	0.14	ug/kg	
110-54-3	Hexane	0.84	5.4	0.26	ug/kg	J
98-82-8	Isopropylbenzene	0.74	5.4	0.080	ug/kg	J
95-63-6	1,2,4-Trimethylbenzene	ND	5.4	0.22	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	5.4	0.17	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	105%		59-130%
17060-07-0	1,2-Dichloroethane-D4	106%		65-123%
2037-26-5	Toluene-D8	104%		80-124%
460-00-4	4-Bromofluorobenzene	96%		71-132%

ND = Not detected      MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-2A(5.0-5.5)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-4	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	80.3
<b>Method:</b>	SW846 8270D SW846 3550C		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M56734.D	1	09/25/13	ALS	09/24/13	OP69232	E2M2403
Run #2							

	Initial Weight	Final Volume
Run #1	20.3 g	1.0 ml
Run #2		

**ABN Special List**

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	310	100	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	1200	75	ug/kg	
95-48-7	2-Methylphenol	ND	120	70	ug/kg	
	3&4-Methylphenol	ND	120	78	ug/kg	
100-02-7	4-Nitrophenol	ND	610	100	ug/kg	
108-95-2	Phenol	ND	120	64	ug/kg	
83-32-9	Acenaphthene	478	61	18	ug/kg	
120-12-7	Anthracene	27.2	61	21	ug/kg	J
56-55-3	Benzo(a)anthracene	27.0	61	20	ug/kg	J
50-32-8	Benzo(a)pyrene	ND	61	19	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	61	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	26.5	61	23	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	61	23	ug/kg	
92-52-4	1,1'-Biphenyl	ND	120	7.1	ug/kg	
218-01-9	Chrysene	ND	61	21	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	61	21	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	120	14	ug/kg	
84-66-2	Diethyl phthalate	ND	120	21	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	120	54	ug/kg	
206-44-0	Fluoranthene	107	61	27	ug/kg	
86-73-7	Fluorene	113	61	20	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	61	21	ug/kg	
91-57-6	2-Methylnaphthalene	34.6	120	34	ug/kg	J
91-20-3	Naphthalene	ND	61	17	ug/kg	
85-01-8	Phenanthrene	117	61	28	ug/kg	
129-00-0	Pyrene	95.5	61	24	ug/kg	
110-86-1	Pyridine	ND	120	25	ug/kg	
91-22-5	Quinoline	ND	310	58	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	90%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-2A(5.0-5.5)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-4	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	80.3
<b>Method:</b>	SW846 8270D SW846 3550C		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	78%		15-110%
118-79-6	2,4,6-Tribromophenol	96%		20-123%
4165-60-0	Nitrobenzene-d5	82%		10-110%
321-60-8	2-Fluorobiphenyl	84%		17-110%
1718-51-0	Terphenyl-d14	95%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-2A(5.0-5.5)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-4	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	80.3
<b>Method:</b>	SW846 8011 SW846 3550B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	BK29905.D	1	09/26/13	AMA	09/26/13	M:OP34986	M:GBK997
Run #2							

	Initial Weight	Final Volume
Run #1	30.7 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	3.0	1.1	ug/kg	
CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits						
460-00-4	Bromofluorobenzene (S)	144%			61-167%	
460-00-4	Bromofluorobenzene (S)	117%			61-167%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-2A(5.0-5.5)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-4	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	80.3
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

**Metals Analysis**

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	7.2	6.4	0.085	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Lead	23.2	2.6	0.27	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Nickel	13.9	5.1	0.10	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Vanadium	34.6	6.4	0.094	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Zinc	49.7	2.6	0.30	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA32250

(2) Prep QC Batch: MP74875

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-3A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-5	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.4
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2C112070.D	1	10/01/13	DR	n/a	n/a	V2C5159
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.8 g	10.0 ml	100 ul
Run #2			

**Leaded Gasoline and Aviation Gas List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	62.1	110	13	ug/kg	J
108-88-3	Toluene	79.7	110	12	ug/kg	J
100-41-4	Ethylbenzene	46.0	110	29	ug/kg	J
1330-20-7	Xylene (total)	260	110	15	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	110	26	ug/kg	
135-98-8	sec-Butylbenzene	426	560	13	ug/kg	
98-06-6	tert-Butylbenzene	939	560	33	ug/kg	
110-82-7	Cyclohexane	4680	560	14	ug/kg	
107-06-2	1,2-Dichloroethane	ND	110	15	ug/kg	
110-54-3	Hexane	1050	560	27	ug/kg	
98-82-8	Isopropylbenzene	752	560	8.3	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	115	560	23	ug/kg	J
108-67-8	1,3,5-Trimethylbenzene	ND	560	18	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		59-130%
17060-07-0	1,2-Dichloroethane-D4	84%		65-123%
2037-26-5	Toluene-D8	92%		80-124%
460-00-4	4-Bromofluorobenzene	81%		71-132%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-3A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-5	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.4
<b>Method:</b>	SW846 8270D SW846 3550C		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M56773.D	1	09/26/13	KS	09/24/13	OP69232	E2M2405
Run #2							

	Initial Weight	Final Volume
Run #1	20.2 g	1.0 ml
Run #2		

**ABN Special List**

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	290	99	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	1200	72	ug/kg	
95-48-7	2-Methylphenol	ND	120	67	ug/kg	
	3&4-Methylphenol	ND	120	74	ug/kg	
100-02-7	4-Nitrophenol	ND	590	99	ug/kg	
108-95-2	Phenol	ND	120	62	ug/kg	
83-32-9	Acenaphthene	580	59	17	ug/kg	
120-12-7	Anthracene	955	59	21	ug/kg	
56-55-3	Benzo(a)anthracene	1260	59	19	ug/kg	
50-32-8	Benzo(a)pyrene	932	59	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	935	59	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	685	59	22	ug/kg	
207-08-9	Benzo(k)fluoranthene	247	59	22	ug/kg	
92-52-4	1,1'-Biphenyl	ND	120	6.8	ug/kg	
218-01-9	Chrysene	2080	59	20	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	240	59	20	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	120	13	ug/kg	
84-66-2	Diethyl phthalate	ND	120	20	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	120	52	ug/kg	
206-44-0	Fluoranthene	1530	59	26	ug/kg	
86-73-7	Fluorene	ND	59	19	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	425	59	20	ug/kg	
91-57-6	2-Methylnaphthalene	ND	120	33	ug/kg	
91-20-3	Naphthalene	ND	59	16	ug/kg	
85-01-8	Phenanthrene	2830	59	27	ug/kg	
129-00-0	Pyrene	2120	59	23	ug/kg	
110-86-1	Pyridine	ND	120	23	ug/kg	
91-22-5	Quinoline	ND	290	55	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	97%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 2 of 2

<b>Client Sample ID:</b>	<b>MH523-3A(0.0-2.0)</b>	<b>Date Sampled:</b>	<b>09/18/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-5</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>SO - Soil</b>		
<b>Method:</b>	<b>SW846 8270D SW846 3550C</b>		
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>	<b>Percent Solids:</b>	<b>84.4</b>

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	91%		15-110%
118-79-6	2,4,6-Tribromophenol	108%		20-123%
4165-60-0	Nitrobenzene-d5	91%		10-110%
321-60-8	2-Fluorobiphenyl	88%		17-110%
1718-51-0	Terphenyl-d14	89%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 1

<b>Client Sample ID:</b>	MH523-3A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-5	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.4
<b>Method:</b>	SW846 8011 SW846 3550B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	BK29906.D	1	09/26/13	AMA	09/26/13	M:OP34986	M:GBK997
Run #2							

	Initial Weight	Final Volume
Run #1	30.6 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	2.9	1.1	ug/kg	
CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits						
460-00-4	Bromofluorobenzene (S)	135%		61-167%		
460-00-4	Bromofluorobenzene (S)	114%		61-167%		

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 1

<b>Client Sample ID:</b>	MH523-3A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-5	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	84.4
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

**Metals Analysis**

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	8.5	6.0	0.079	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Lead	83.1	2.4	0.26	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Nickel	20.3	4.8	0.095	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Vanadium	34.9	6.0	0.087	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>
Zinc	99.5	2.4	0.28	mg/kg	1	09/27/13	09/28/13 KK	SW846 6010C <sup>1</sup>	SW846 3050B <sup>2</sup>

(1) Instrument QC Batch: MA32250

(2) Prep QC Batch: MP74875

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-3A(5.3-5.8)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-6	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	81.4
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	D213627.D	1	09/27/13	CM	n/a	n/a	VD8725
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	6.4 g	10.0 ml	100 ul
Run #2			

**Leaded Gasoline and Aviation Gas List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	110	13	ug/kg	
108-88-3	Toluene	23.3	110	11	ug/kg	J
100-41-4	Ethylbenzene	ND	110	28	ug/kg	
1330-20-7	Xylene (total)	128	110	15	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	110	25	ug/kg	
135-98-8	sec-Butylbenzene	3490	540	12	ug/kg	
98-06-6	tert-Butylbenzene	2630	540	32	ug/kg	
110-82-7	Cyclohexane	969	540	13	ug/kg	
107-06-2	1,2-Dichloroethane	ND	110	14	ug/kg	
110-54-3	Hexane	525	540	26	ug/kg	J
98-82-8	Isopropylbenzene	3280	540	8.0	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	151	540	22	ug/kg	J
108-67-8	1,3,5-Trimethylbenzene	49.7	540	17	ug/kg	J

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	95%		59-130%
17060-07-0	1,2-Dichloroethane-D4	101%		65-123%
2037-26-5	Toluene-D8	115%		80-124%
460-00-4	4-Bromofluorobenzene	122%		71-132%

ND = Not detected      MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 2

**Client Sample ID:** MH523-3A(5.3-5.8)  
**Lab Sample ID:** JB47773-6  
**Matrix:** SO - Soil  
**Method:** SW846 8270D SW846 3550C  
**Project:** Sunoco - Marcus Hook Facility, PA

**Date Sampled:** 09/18/13  
**Date Received:** 09/18/13  
**Percent Solids:** 81.4

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	2M56774.D	1	09/26/13	KS	09/24/13	OP69232	E2M2405

	Initial Weight	Final Volume
Run #1	20.3 g	1.0 ml
Run #2		

**ABN Special List**

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	300	100	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	1200	74	ug/kg	
95-48-7	2-Methylphenol	ND	120	69	ug/kg	
	3&4-Methylphenol	ND	120	77	ug/kg	
100-02-7	4-Nitrophenol	ND	610	100	ug/kg	
108-95-2	Phenol	ND	120	64	ug/kg	
83-32-9	Acenaphthene	ND	61	18	ug/kg	
120-12-7	Anthracene	1880	61	21	ug/kg	
56-55-3	Benzo(a)anthracene	1140	61	20	ug/kg	
50-32-8	Benzo(a)pyrene	701	61	18	ug/kg	
205-99-2	Benzo(b)fluoranthene	ND	61	20	ug/kg	
191-24-2	Benzo(g,h,i)perylene	542	61	23	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	61	23	ug/kg	
92-52-4	1,1'-Biphenyl	ND	120	7.0	ug/kg	
218-01-9	Chrysene	3050	61	20	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	179	61	21	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	120	13	ug/kg	
84-66-2	Diethyl phthalate	ND	120	21	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	120	53	ug/kg	
206-44-0	Fluoranthene	ND	61	27	ug/kg	
86-73-7	Fluorene	ND	61	20	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	266	61	21	ug/kg	
91-57-6	2-Methylnaphthalene	ND	120	34	ug/kg	
91-20-3	Naphthalene	ND	61	17	ug/kg	
85-01-8	Phenanthrene	5840	61	28	ug/kg	
129-00-0	Pyrene	2950	61	23	ug/kg	
110-86-1	Pyridine	ND	120	24	ug/kg	
91-22-5	Quinoline	ND	300	57	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	65%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 2 of 2

<b>Client Sample ID:</b>	<b>MH523-3A(5.3-5.8)</b>	<b>Date Sampled:</b>	<b>09/18/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-6</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>SO - Soil</b>		
<b>Method:</b>	<b>SW846 8270D SW846 3550C</b>		
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>	<b>Percent Solids:</b>	<b>81.4</b>

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	62%		15-110%
118-79-6	2,4,6-Tribromophenol	96%		20-123%
4165-60-0	Nitrobenzene-d5	78%		10-110%
321-60-8	2-Fluorobiphenyl	71%		17-110%
1718-51-0	Terphenyl-d14	100%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 1

**Client Sample ID:** MH523-3A(5.3-5.8)  
**Lab Sample ID:** JB47773-6  
**Matrix:** SO - Soil  
**Method:** SW846 8011 SW846 3550B  
**Project:** Sunoco - Marcus Hook Facility, PA

**Date Sampled:** 09/18/13  
**Date Received:** 09/18/13  
**Percent Solids:** 81.4

Run #1 <sup>a</sup>	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	BK29908.D	1	09/26/13	AMA	09/26/13	M:OP34986	M:GBK997
Run #2							

	Initial Weight	Final Volume
Run #1	30.4 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	3.0	1.1	ug/kg	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
460-00-4	Bromofluorobenzene (S)	144%		61-167%		
460-00-4	Bromofluorobenzene (S)	109%		61-167%		

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 1

<b>Client Sample ID:</b>	MH523-3A(5.3-5.8)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-6	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	81.4
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

**Metals Analysis**

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	6.7	6.0	0.079	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Lead	13.5	2.4	0.25	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Nickel	12.6	4.8	0.094	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Vanadium	29.8	6.0	0.087	mg/kg	1	09/27/13	10/01/13	GT	SW846 6010C <sup>2</sup>
Zinc	33.2	2.4	0.28	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>

(1) Instrument QC Batch: MA32256

(2) Instrument QC Batch: MA32269

(3) Prep QC Batch: MP74875

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-4A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-7	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	85.2
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	V138349.D	1	10/02/13	OTR	n/a	n/a	VV5951
Run #2							

	Initial Weight
Run #1	4.7 g
Run #2	

**Leaded Gasoline and Aviation Gas List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.2	0.15	ug/kg	
108-88-3	Toluene	ND	1.2	0.13	ug/kg	
100-41-4	Ethylbenzene	ND	1.2	0.33	ug/kg	
1330-20-7	Xylene (total)	ND	1.2	0.17	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	1.2	0.29	ug/kg	
135-98-8	sec-Butylbenzene	ND	6.2	0.14	ug/kg	
98-06-6	tert-Butylbenzene	ND	6.2	0.37	ug/kg	
110-82-7	Cyclohexane	ND	6.2	0.15	ug/kg	
107-06-2	1,2-Dichloroethane	ND	1.2	0.17	ug/kg	
110-54-3	Hexane	1.1	6.2	0.30	ug/kg	J
98-82-8	Isopropylbenzene	ND	6.2	0.093	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	ND	6.2	0.26	ug/kg	
108-67-8	1,3,5-Trimethylbenzene	ND	6.2	0.20	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		59-130%
17060-07-0	1,2-Dichloroethane-D4	104%		65-123%
2037-26-5	Toluene-D8	103%		80-124%
460-00-4	4-Bromofluorobenzene	91%		71-132%

ND = Not detected      MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 2

<b>Client Sample ID:</b>	MH523-4A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-7	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	85.2
<b>Method:</b>	SW846 8270D SW846 3550C		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M56775.D	1	09/26/13	KS	09/24/13	OP69232	E2M2405
Run #2							

	Initial Weight	Final Volume
Run #1	20.6 g	1.0 ml
Run #2		

**ABN Special List**

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	280	96	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	1100	70	ug/kg	
95-48-7	2-Methylphenol	ND	110	65	ug/kg	
	3&4-Methylphenol	ND	110	72	ug/kg	
100-02-7	4-Nitrophenol	ND	570	96	ug/kg	
108-95-2	Phenol	ND	110	60	ug/kg	
83-32-9	Acenaphthene	ND	57	17	ug/kg	
120-12-7	Anthracene	64.8	57	20	ug/kg	
56-55-3	Benzo(a)anthracene	114	57	19	ug/kg	
50-32-8	Benzo(a)pyrene	84.5	57	17	ug/kg	
205-99-2	Benzo(b)fluoranthene	82.3	57	19	ug/kg	
191-24-2	Benzo(g,h,i)perylene	151	57	21	ug/kg	
207-08-9	Benzo(k)fluoranthene	ND	57	21	ug/kg	
92-52-4	1,1'-Biphenyl	74.1	110	6.6	ug/kg	J
218-01-9	Chrysene	170	57	19	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	57	19	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	110	13	ug/kg	
84-66-2	Diethyl phthalate	ND	110	19	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	110	50	ug/kg	
206-44-0	Fluoranthene	112	57	25	ug/kg	
86-73-7	Fluorene	ND	57	19	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	55.2	57	20	ug/kg	J
91-57-6	2-Methylnaphthalene	450	110	32	ug/kg	
91-20-3	Naphthalene	143	57	16	ug/kg	
85-01-8	Phenanthrene	534	57	26	ug/kg	
129-00-0	Pyrene	450	57	22	ug/kg	
110-86-1	Pyridine	ND	110	23	ug/kg	
91-22-5	Quinoline	ND	280	54	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	72%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 2 of 2

<b>Client Sample ID:</b>	<b>MH523-4A(0.0-2.0)</b>	<b>Date Sampled:</b>	<b>09/18/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-7</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>SO - Soil</b>		
<b>Method:</b>	<b>SW846 8270D SW846 3550C</b>		
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>	<b>Percent Solids:</b>	<b>85.2</b>

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	70%		15-110%
118-79-6	2,4,6-Tribromophenol	104%		20-123%
4165-60-0	Nitrobenzene-d5	66%		10-110%
321-60-8	2-Fluorobiphenyl	86%		17-110%
1718-51-0	Terphenyl-d14	88%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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<b>Client Sample ID:</b>	MH523-4A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-7	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	85.2
<b>Method:</b>	SW846 8011 SW846 3550B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	BK29909.D	1	09/26/13	AMA	09/26/13	M:OP34986	M:GBK997
Run #2							

	Initial Weight	Final Volume
Run #1	30.2 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	2.9	1.1	ug/kg	
<b>CAS No.</b> <b>Surrogate Recoveries</b> <b>Run# 1</b> <b>Run# 2</b> <b>Limits</b>						
460-00-4	Bromofluorobenzene (S)	143%			61-167%	
460-00-4	Bromofluorobenzene (S)	111%			61-167%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 1

<b>Client Sample ID:</b>	MH523-4A(0.0-2.0)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-7	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	85.2
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

**Metals Analysis**

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	6.4	5.9	0.078	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Lead	68.1	2.4	0.25	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Nickel	17.8	4.7	0.093	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Vanadium	35.5	5.9	0.086	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Zinc	54.8	2.4	0.28	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>

(1) Instrument QC Batch: MA32256

(2) Prep QC Batch: MP74875

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

**Report of Analysis**

Page 1 of 1

<b>Client Sample ID:</b>	MH523-4A(6.0-6.5)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-8	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	80.5
<b>Method:</b>	SW846 8260B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2C112071.D	1	10/01/13	DR	n/a	n/a	V2C5159
Run #2							

	Initial Weight	Final Volume	Methanol Aliquot
Run #1	5.9 g	10.0 ml	100 ul
Run #2			

**Leaded Gasoline and Aviation Gas List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	25.2	120	14	ug/kg	J
108-88-3	Toluene	41.2	120	12	ug/kg	J
100-41-4	Ethylbenzene	106	120	31	ug/kg	J
1330-20-7	Xylene (total)	224	120	16	ug/kg	
1634-04-4	Methyl Tert Butyl Ether	ND	120	28	ug/kg	
135-98-8	sec-Butylbenzene	1500	590	13	ug/kg	
98-06-6	tert-Butylbenzene	1750	590	35	ug/kg	
110-82-7	Cyclohexane	471	590	15	ug/kg	J
107-06-2	1,2-Dichloroethane	ND	120	16	ug/kg	
110-54-3	Hexane	63.1	590	28	ug/kg	J
98-82-8	Isopropylbenzene	2210	590	8.7	ug/kg	
95-63-6	1,2,4-Trimethylbenzene	104	590	25	ug/kg	J
108-67-8	1,3,5-Trimethylbenzene	ND	590	19	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	90%		59-130%
17060-07-0	1,2-Dichloroethane-D4	84%		65-123%
2037-26-5	Toluene-D8	92%		80-124%
460-00-4	4-Bromofluorobenzene	86%		71-132%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 2

<b>Client Sample ID:</b>	MH523-4A(6.0-6.5)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-8	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	80.5
<b>Method:</b>	SW846 8270D SW846 3550C		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2M56735.D	1	09/25/13	ALS	09/24/13	OP69232	E2M2403
Run #2							

	Initial Weight	Final Volume
Run #1	20.9 g	1.0 ml
Run #2		

**ABN Special List**

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	300	100	ug/kg	
51-28-5	2,4-Dinitrophenol	ND	1200	73	ug/kg	
95-48-7	2-Methylphenol	ND	120	68	ug/kg	
	3&4-Methylphenol	ND	120	75	ug/kg	
100-02-7	4-Nitrophenol	ND	590	100	ug/kg	
108-95-2	Phenol	ND	120	62	ug/kg	
83-32-9	Acenaphthene	769	59	17	ug/kg	
120-12-7	Anthracene	1260	59	21	ug/kg	
56-55-3	Benzo(a)anthracene	174	59	19	ug/kg	
50-32-8	Benzo(a)pyrene	54.7	59	18	ug/kg	J
205-99-2	Benzo(b)fluoranthene	47.1	59	20	ug/kg	J
191-24-2	Benzo(g,h,i)perylene	38.5	59	22	ug/kg	J
207-08-9	Benzo(k)fluoranthene	ND	59	22	ug/kg	
92-52-4	1,1'-Biphenyl	ND	120	6.9	ug/kg	
218-01-9	Chrysene	246	59	20	ug/kg	
53-70-3	Dibenzo(a,h)anthracene	ND	59	20	ug/kg	
84-74-2	Di-n-butyl phthalate	ND	120	13	ug/kg	
84-66-2	Diethyl phthalate	ND	120	20	ug/kg	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	120	52	ug/kg	
206-44-0	Fluoranthene	359	59	26	ug/kg	
86-73-7	Fluorene	2370	59	19	ug/kg	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	59	21	ug/kg	
91-57-6	2-Methylnaphthalene	ND	120	33	ug/kg	
91-20-3	Naphthalene	ND	59	16	ug/kg	
85-01-8	Phenanthrene	4990	59	27	ug/kg	
129-00-0	Pyrene	1660	59	23	ug/kg	
110-86-1	Pyridine	ND	120	24	ug/kg	
91-22-5	Quinoline	ND	300	56	ug/kg	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	93%		13-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 2 of 2

<b>Client Sample ID:</b>	<b>MH523-4A(6.0-6.5)</b>	<b>Date Sampled:</b>	<b>09/18/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-8</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>SO - Soil</b>		
<b>Method:</b>	<b>SW846 8270D SW846 3550C</b>		
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>	<b>Percent Solids:</b>	<b>80.5</b>

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	85%		15-110%
118-79-6	2,4,6-Tribromophenol	109%		20-123%
4165-60-0	Nitrobenzene-d5	93%		10-110%
321-60-8	2-Fluorobiphenyl	90%		17-110%
1718-51-0	Terphenyl-d14	95%		30-124%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 1

<b>Client Sample ID:</b>	MH523-4A(6.0-6.5)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-8	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	80.5
<b>Method:</b>	SW846 8011 SW846 3550B		
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	BK29910.D	1	09/26/13	AMA	09/26/13	M:OP34986	M:GBK997
Run #2							

	Initial Weight	Final Volume
Run #1	30.1 g	50.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
106-93-4	1,2-Dibromoethane	ND	3.1	1.1	ug/kg	
CAS No. Surrogate Recoveries Run# 1 Run# 2 Limits						
460-00-4	Bromofluorobenzene (S)	145%			61-167%	
460-00-4	Bromofluorobenzene (S)	112%			61-167%	

(a) Analysis performed at Accutest Laboratories, Marlborough, MA.

ND = Not detected      MDL = Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 1

<b>Client Sample ID:</b>	MH523-4A(6.0-6.5)	<b>Date Sampled:</b>	09/18/13
<b>Lab Sample ID:</b>	JB47773-8	<b>Date Received:</b>	09/18/13
<b>Matrix:</b>	SO - Soil	<b>Percent Solids:</b>	80.5
<b>Project:</b>	Sunoco - Marcus Hook Facility, PA		

**Metals Analysis**

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	6.5	6.3	0.083	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Lead	38.6	2.5	0.27	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Nickel	13.5	5.0	0.099	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Vanadium	29.6	6.3	0.092	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>
Zinc	52.2	2.5	0.29	mg/kg	1	09/27/13	09/28/13	ND	SW846 6010C <sup>1</sup>

(1) Instrument QC Batch: MA32256

(2) Prep QC Batch: MP74875

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL

**Report of Analysis**

Page 1 of 1

**Client Sample ID:** FB09182013  
**Lab Sample ID:** JB47773-9  
**Matrix:** AQ - Field Blank Soil  
**Method:** SW846 8260B  
**Project:** Sunoco - Marcus Hook Facility, PA

**Date Sampled:** 09/18/13  
**Date Received:** 09/18/13  
**Percent Solids:** n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2E95335.D	1	10/01/13	TYG	n/a	n/a	V2E4300
Run #2							

**Purge Volume**  
Run #1 5.0 ml  
Run #2

**Leaded Gasoline and Aviation Gas List**

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.24	ug/l	
108-88-3	Toluene	ND	1.0	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.23	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.24	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.16	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.21	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.30	ug/l	
110-82-7	Cyclohexane	ND	5.0	0.35	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.26	ug/l	
110-54-3	Hexane	ND	5.0	0.46	ug/l	
98-82-8	Isopropylbenzene	ND	2.0	0.45	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	2.0	0.19	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	2.0	0.36	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		79-117%
17060-07-0	1,2-Dichloroethane-D4	98%		72-123%
2037-26-5	Toluene-D8	98%		82-118%
460-00-4	4-Bromofluorobenzene	90%		75-118%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

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4.9

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**Client Sample ID:** FB09182013  
**Lab Sample ID:** JB47773-9  
**Matrix:** AQ - Field Blank Soil  
**Method:** SW846 8270D SW846 3510C  
**Project:** Sunoco - Marcus Hook Facility, PA

**Date Sampled:** 09/18/13  
**Date Received:** 09/18/13  
**Percent Solids:** n/a

Run #1 <sup>a</sup>	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3E54328.D	1	10/03/13	KS	10/02/13	OP69491	E3E2343
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

**ABN Special List**

CAS No.	Compound	Result	RL	MDL	Units	Q
105-67-9	2,4-Dimethylphenol	ND	5.0	1.5	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	17	ug/l	
95-48-7	2-Methylphenol	ND	2.0	1.0	ug/l	
	3&4-Methylphenol	ND	2.0	0.93	ug/l	
100-02-7	4-Nitrophenol	ND	10	5.2	ug/l	
108-95-2	Phenol	ND	2.0	1.3	ug/l	
83-32-9	Acenaphthene	ND	1.0	0.26	ug/l	
120-12-7	Anthracene	ND	1.0	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	1.0	0.23	ug/l	
50-32-8	Benzo(a)pyrene	ND	1.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	1.0	0.46	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	1.0	0.32	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	1.0	0.51	ug/l	
92-52-4	1,1'-Biphenyl	ND	1.0	0.30	ug/l	
218-01-9	Chrysene	ND	1.0	0.29	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	1.0	0.38	ug/l	
84-74-2	Di-n-butyl phthalate	ND	2.0	0.56	ug/l	
84-66-2	Diethyl phthalate	ND	2.0	0.33	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.59	ug/l	
206-44-0	Fluoranthene	ND	1.0	0.32	ug/l	
86-73-7	Fluorene	ND	1.0	0.28	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	1.0	0.37	ug/l	
91-57-6	2-Methylnaphthalene	ND	1.0	0.38	ug/l	
91-20-3	Naphthalene	ND	1.0	0.26	ug/l	
85-01-8	Phenanthrene	ND	1.0	0.29	ug/l	
129-00-0	Pyrene	ND	1.0	0.27	ug/l	
110-86-1	Pyridine	ND	2.0	0.32	ug/l	
91-22-5	Quinoline	ND	5.0	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	50%		10-110%

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 2 of 2

<b>Client Sample ID:</b>	<b>FB09182013</b>	<b>Date Sampled:</b>	<b>09/18/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-9</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>AQ - Field Blank Soil</b>		
<b>Method:</b>	<b>SW846 8270D SW846 3510C</b>		
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>	<b>Percent Solids:</b>	<b>n/a</b>

**ABN Special List**

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-62-2	Phenol-d5	31%		10-110%
118-79-6	2,4,6-Tribromophenol	107%		29-139%
4165-60-0	Nitrobenzene-d5	94%		28-131%
321-60-8	2-Fluorobiphenyl	96%		30-121%
1718-51-0	Terphenyl-d14	109%		16-147%

(a) Sample extracted outside the holding time due to scheduling error.

ND = Not detected MDL = Method Detection Limit

J = Indicates an estimated value

RL = Reporting Limit

B = Indicates analyte found in associated method blank

E = Indicates value exceeds calibration range

N = Indicates presumptive evidence of a compound

**Report of Analysis**

Page 1 of 1

<b>Client Sample ID:</b>	<b>FB09182013</b>	<b>Date Sampled:</b>	<b>09/18/13</b>
<b>Lab Sample ID:</b>	<b>JB47773-9</b>	<b>Date Received:</b>	<b>09/18/13</b>
<b>Matrix:</b>	<b>AQ - Field Blank Soil</b>	<b>Percent Solids:</b>	<b>n/a</b>
<b>Project:</b>	<b>Sunoco - Marcus Hook Facility, PA</b>		

**Total Metals Analysis**

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed By	Method	Prep Method
Cobalt	0.48 U	50	0.48	ug/l	1	09/24/13	09/27/13 GT	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Lead	2.4 U	3.0	2.4	ug/l	1	09/24/13	09/27/13 GT	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Nickel	1.6 U	10	1.6	ug/l	1	09/24/13	09/27/13 GT	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Vanadium	0.72 U	50	0.72	ug/l	1	09/24/13	09/27/13 GT	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Zinc	4.4 U	20	4.4	ug/l	1	09/24/13	09/27/13 GT	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA32252

(2) Prep QC Batch: MP74794

RL = Reporting Limit  
 MDL = Method Detection Limit

U = Indicates a result < MDL  
 B = Indicates a result > = MDL but < RL



## Misc. Forms

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### Custody Documents and Other Forms

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Includes the following where applicable:

- Chain of Custody
- Chain of Custody (Accutest Labs of New England, Inc.)

# CHAIN OF CUSTODY

2235 Route 130, Dayton, NJ 08810  
TEL. 732-329-0200 FAX: 732-329-3499/3480  
www.accutest.com

PAGE \_\_\_ OF \_\_\_

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job #
	JB47773

Client / Reporting Information		Project Information								Requested Analysis (see TEST CODE sheet)								Matrix Codes							
Company Name <b>STANTEC</b>	Project Name <b>SUNOCO - MARCUS Hook</b>																								
Street Address <b>1060 ANDREW DR. SUITE 140</b>	Street	Billing Information (if different from Report to)																							
City <b>WEST CHESTER, PA</b>	State	Company Name																							
Project Contact <b>JENNIFER MENGES</b>	E-mail <b>610.840.2500</b>	Project # <b>213402353</b>	Street Address																						
Phone #	Fax #	Client Purchase Order #		City	State	Zip																			
Sampler(s) Name(s) <b>J. CORBETT</b>		Phone # <b>484.667.6098</b>	Project Manager		Attention:																				
Accutest Sample #		Field ID / Point of Collection		Collection				Number of preserved Bottles																LAB USE ONLY	
				MEOH/D Vol #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNCO	H2SO4	None	D/Water	MECH	ENCORE								
1	MH523-1A(0.0-2.0)	9.17.13	1530	JC	50	5					221		X	X									D62		
2	MH523-1A(5.5-6.0)	9.17.13	1545	JC	50	5					221		X	X									A12		
3	MH523-2A(0.0-2.0)	9.18.13	0925	JC	50	5					221		X	X									2149		
4	MH523-2A(5.0-5.5)	9.18.13	0935	JC	50	5					221		X	X									B24		
5	MH523-3A(0.0-2.0)	9.18.13	1110	JC	50	5					221		X	X									M31T2		
6	MH523-3A(5.3-5.8)	9.18.13	1120	JC	50	5					221		X	X									14JS		
7	MH523-4A(0.0-2.0)	9.18.13	1310	JC	50	5					221		X	X									4930		
8	MH523-4A(6.0-6.5)	9.18.13	1315	JC	50	5					221		X	X											
9	FB09132013	9.18.13	1405	JC	FB	50	4			1	2		X	X											
Turnaround Time (Business days)		Data Deliverable Information								Comments / Special Instructions															
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> other		Approved By (Accutest PM): / Date: <hr/> <hr/> <hr/> <hr/> <hr/>								<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C" <input checked="" type="checkbox"/> EDD Format <b>RESULTS</b> Commercial "A" = Results Only Commercial "B" = Results + QC Summary NJ Reduced = Results + QC Summary + Partial Raw data <input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input type="checkbox"/> Other _____								<b>*SEE ATTACHED COC LIST</b> <b>Rec'd at Exton Service Center 9/18/13</b>							
Emergency & Rush T/A data available VIA Lablink		Sample Custody must be documented below each time sample changes possession including courier delivery.								Date/Time: <b>9/18/13</b>								Received By: <b>2</b>							
Relinquished by Sampler: <b>1</b>		Date/Time: <b>9.18.13 / 1515</b>	Received By: <b>1</b>	Relinquished By: <b>2</b>		Date/Time: <b>9/18/13</b>		Received By: <b>2</b>																	
Relinquished by Sampler: <b>3</b>		Date/Time: <b>9/18/13 1530</b>	Received By: <b>3</b>	Relinquished By: <b>4</b>		Date/Time: <b>9/18/13</b>		Received By: <b>4</b>																	
Relinquished by: <b>5</b>		Date/Time:	Received By: <b>5</b>	Custody Seal #		<input type="checkbox"/> Intact <input type="checkbox"/> Not intact		Preserved where applicable		On Ice <b>X</b> Cooler Temp. <b>21°C-19°C</b>															

21X

**JB47773: Chain of Custody**

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## Comprehensive COC List for Sunoco Characterizations (Sept. 2013)

	<b>VOCs by EPA Method 8260</b>	<b>CAS No.</b>	<b>SVOCs by EPA Method 8270</b>	<b>CAS No.</b>
Benzene		71-43-2	Aceanaphthene	83-32-9
Butylbenzene, sec-		135-98-8	Anthracene	120-12-7
Butylbenzene, tert-		98-06-6	Benz(a)anthracene	56-55-3
Cumene		98-82-8	Benz(a)pyrene	50-32-8
Cyclohexane		110-82-7	Benz(b)furananthene	205-99-2
Dichloroethane, 1,2-		107-06-2	Benzog(h)perylene	191-24-2
Ethylbenzene		100-41-4	Benzol(k)furananthene	207-08-9
Hexane		110-54-3	Biphenyl, 1,1-	92-52-4
Methyl tert butyl ether		1634-04-4	Bis(2-ethylhexyl) phthalate	117-81-7
Toluene		108-88-3	Chrysene	218-01-9
Trimethylbenzene, 1,2,4-		95-63-6	Cresol, m-(3-methylphenol)	108-39-4
Trimethylbenzene, 1,3,5-		108-67-8	Cresol, o-(2-methylphenol)	95-48-7
Xylenes		1330-20-7	Cresol, p-(4-methylphenol)	106-44-5
			Dibenz(a,h)anthraene	53-70-3
			Diethyl phthalate	84-66-2
<b>EDB by EPA Method 8011</b>	<b>CAS No.</b>		Dimethylphenol, 2,4-	105-67-9
Ethylene Dibromide		106-93-4	Diethyl phthalate, n-	84-74-2
			Dinitrophenol, 2,4-	51-28-5
			Fluoranthene	206-44-0
<b>Metals by Method 6010/6020</b>	<b>CAS No.</b>		Fluorene	86-73-7
Cobalt		7440-48-4	Indeno[1,2,3-cd]pyrene	193-39-5
Lead		7439-92-1	Methylnaphthalene, 2-	91-57-6
Nickel		7440-02-0	Naphthalene	91-20-3
Vanadium		7440-62-2	Nitrophenol, 4-	100-02-7
Zinc		7440-66-6	Phenanthrene	85-01-8
			Phenol	108-95-2
			Pyrene	129-90-0
			Pyridine	110-36-1
			Quinoline	91-22-5

List from PADEP SERO Crude Oil Parameters for Corrective Action (CDB | SERO | PA DEP | 9 Aug 2013)  
combined with PADEP Petroleum Shortlist (leaded and unleaded gasoline and No. 2, 4, 5, 6 Fuel Oils).



## Accutest Laboratories Sample Receipt Summary

5.1

Accutest Job Number: JB47773

Client:

Project:

Date / Time Received: 9/18/2013

Delivery Method:

Airbill #'s:

Cooler Temps (Initial/Adjusted): #1: (2.1/2.1); 0

**Cooler Security****Y or N**

- |                           |                                     |                          |                       |                                     |                          |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Cooler Temperature****Y or N**

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun                              |                          |
| 3. Cooler media:             | Ice (Bag)                           |                          |
| 4. No. Coolers:              | 1                                   |                          |

**Quality Control Preservatio****Y or N N/A**

- |                                 |                                     |                                     |                          |
|---------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                          |
| 4. VOCs headspace free:         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input type="checkbox"/> |

**Sample Integrity - Documentation****Y or N**

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Sample Integrity - Condition****Y or N**

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |                          |

**Sample Integrity - Instructions****Y or N N/A**

- |   |                                     |                                     |
|---|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            | <input type="checkbox"/>            |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            | <input type="checkbox"/>            |

Comments

Accutest Laboratories  
V:732.329.02002235 US Highway 130  
F: 732.329.3499Dayton, New Jersey  
[www.accutest.com](http://www.accutest.com)**JB47773: Chain of Custody****Page 3 of 4**

**Job Change Order:**

JB47773

Requested Date: 10/23/2013  
Account Name: Stantec Consulting Services Inc.  
Project Description: Sunoco - Marcus Hook Facility, PA  
CSR: kristinb

Received Date: 9/18/2013  
Due Date: 10/2/2013  
Deliverable: REDT2  
TAT (Days): 14

**Change:**

Sample was accidentally never run for V8011EDB. No exceedances detected in samples, so V8011EDB can be canceled on this sample.

FB09182013

**Above Changes Per:**Client / Jennifer Menges**Date:** 10/23/2013**JB47773: Chain of Custody****Page 4 of 4**

To Client: This Change Order is confirmation of the revisions, previously discussed with the Accutest Client Service Representative.

Page 1 of 1

**CHAIN OF CUSTODY**
**PAGE 1 OF 1**

 2235 Route 130, Dayton, NJ 08810  
 TEL: 732-329-0200 FAX: 732-329-3499/3480  
[www.accutest.com](http://www.accutest.com)

FED-EX Tracking #		Bottle Order Control #		
Accutest Quote #		Accutest Job # <b>JB47773</b>		
Requested Analysis ( see TEST CODE sheet )				Matrix Codes
				DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank
				LAB USE ONLY

Client / Reporting Information		Project Information															
Company Name: <b>Accutest Laboratories</b>		Project Name: <b>Sunoco - Marcus Hook Facility, PA</b>															
Street Address <b>2235 route 130</b>		Street		Billing Information ( if different from Report to )													
City <b>Dayton</b>	State <b>NJ</b>	Zip <b>08810</b>	City	State	Company Name												
Project Contact E-mail kristinb		Project #		Street Address													
Phone # <b>732-329-0200</b>	Fax #	Client Purchase Order #		City	State	Zip											
Sampler(s) Name(s) <b>JC</b>		Phone	Project Manager		Attention:												
Accutest Sample #		Field ID / Point of Collection		Collection		MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles					
				CH	HON							ECOH	KSH	SH	NE	WW	DI
1	<b>MH523-1A(0.0-2.0)</b>			9/17/13	3:30:00 PM	JC	SO				1					X	
2	<b>MH523-1A(5.5-6.0)</b>			9/17/13	3:45:00 PM	JC	SO				1					X	
3	<b>MH523-2A(0.0-2.0)</b>			9/18/13	9:25:00 AM	JC	SO				1					X	
4	<b>MH523-2A(5.0-5.5)</b>			9/18/13	9:35:00 AM	JC	SO				1					X	
5	<b>MH523-3A(0.0-2.0)</b>			9/18/13	11:10:00 AM	JC	SO				1					X	
6	<b>MH523-3A(5.3-5.8)</b>			9/18/13	11:20:00 AM	JC	SO				1					X	
7	<b>MH523-4A(0.0-2.0)</b>			9/18/13	1:10:00 PM	JC	SO				1					X	
8	<b>MH523-4A(6.0-6.5)</b>			9/18/13	1:15:00 PM	JC	SO				1					X	
9	<b>FB09182013</b>			9/18/13	2:05:00 PM	JC	AQ				2					X	
Turnaround Time ( Business days )		Data Deliverable Information										Comments / Special Instructions					
Approved By (Accutest PM): / Date:		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> FULLT1 (Level 3+4) <input checked="" type="checkbox"/> NJ Reduced <input type="checkbox"/> Commercial "C"										<input type="checkbox"/> NYASP Category A <input type="checkbox"/> NYASP Category B <input type="checkbox"/> State Forms <input type="checkbox"/> EDD Format <input type="checkbox"/> Other					
<input checked="" type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> other _____																	
Emergency & Rush: 24 hr available VIA Lablink																	
Sample Custody must be documented below each time samples change possession, including courier delivery.												17A, 2C					
Relinquished by Sampler:	Date Time: <b>9/20/13 100</b>	Received By: <b>1</b>	Relinquished By: <b>2</b>	Date Time: <b>9/21/13 100</b>	Received By: <b>2</b>												
1																	
Relinquished by Sampler:	Date Time: <b>3</b>	Received By: <b>3</b>	Relinquished By: <b>4</b>	Date Time: <b>4</b>	Received By: <b>4</b>												
3																	
Relinquished by:	Date Time: <b>5</b>	Received By: <b>5</b>	Custody Seal:	Preserved where applicable	On Ice: <input checked="" type="checkbox"/>	Cooler Temp: <b>23</b>											
5																	

**JB47773: Chain of Custody**  
**Page 1 of 2**  
**Accutest Labs of New England, Inc.**



## Accutest Laboratories Sample Receipt Summary

Accutest Job Number: JB47773

Client: ACNJ

Immediate Client Services Action Required: No

Date / Time Received: 9/21/2013

Delivery Method:

Client Service Action Required at Login: No

Project: SUB

No. Coolers:

1

Airbill #'s:

**Cooler Security**Y or NY or N

1. Custody Seals Present:        3. COC Present:    
 2. Custody Seals Intact:        4. Smpl Dates/Time OK

**Cooler Temperature**Y or N

1. Temp criteria achieved:    
 2. Cooler temp verification:  Infared gun  
 3. Cooler media:  Ice (bag)

**Quality Control Preservation**Y or N N/A

1. Trip Blank present / cooler:     
 2. Trip Blank listed on COC:     
 3. Samples preserved properly:    
 4. VOCs headspace free:

**Sample Integrity - Documentation**Y or N

1. Sample labels present on bottles:    
 2. Container labeling complete:    
 3. Sample container label / COC agree:

**Sample Integrity - Condition**Y or N

1. Sample rcvd within HT:    
 2. All containers accounted for:    
 3. Condition of sample:  Intact

**Sample Integrity - Instructions**Y or N N/A

1. Analysis requested is clear:    
 2. Bottles received for unspecified tests:    
 3. Sufficient volume rcvd for analysis:    
 4. Compositing instructions clear:     
 5. Filtering instructions clear:

Comments

**JB47773: Chain of Custody**

**Page 2 of 2**